#### STATE OF MISSOURI

### DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION



PERMIT BOOK

## PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 03 2 0 0 6 - 0 0 8

Project Number:

2005-10-018

Owner:

**Enersys** 

Owner's Address: 2366 Bernville Road, Reading, PA 19605

Installation Name: Enersys Energy Products, Inc.

Installation Address: 617 N. Ridgeview Dr., Warrensburg, MO 64093-9301

Location Information: Johnson County, S19, T46N, R25W

Application for Authority to Construct was made for:

Construction of Phase II of the Large VRLA Cell Assembly line. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, Construction Permits Required.

☐ Standard Conditions (on reverse) are applicable to this permit.

In Standard Conditions (on reverse) and Special Conditions (listed as attachments starting on page 2) are applicable to this permit.

MAR 1 0 2006

EFFECTIVE DATE

DIRECTOR OR DESIGNEE

DEPARTMENT OF NATURAL RESOURCES

#### STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional Office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed Special Conditions as provided in RSMo 643.075. If you choose to appeal, the Air Pollution Control Program must receive your written declaration within 30 days of receipt of this permit.

If you choose not to appeal, this certificate, the project review, your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Department of Natural Resources has established the Outreach and Assistance Center to help in completing future applications or fielding complaints about the permitting process. You are invited to contact them at 1-800-361-4827 or (573) 526-6627, or in writing addressed to Outreach and Assistance Center, P.O. Box 176, Jefferson City, MO 65102-0176.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention Construction Permit Unit.

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#### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Enersys Energy Products, Inc. Johnson County, S19, T46N, R25W

- 1. Superseding Condition
  - The conditions of this permit supersede all special conditions found in the previously issued construction permits (Permit Numbers 0284-011, 0885-008, 0590-013, 1090-008, 0791-002, 1292-001, 1193-001, 1294-012, 0495-017, 0196-014, 0896-020, 092000-004, 052001-019, 092000-004A, 112003-012 and 122004-010) from the Air Pollution Control Program.
- 2. Shut Down of Existing Emission Units and Operations at Installation
  - A. Enersys Energy Products, Inc. shall render inoperable the equipment listed below before the date the new paste mixers (EP-85 and EP-86) become fully operational. Enersys Energy Products, Inc. is allowed a period, not to exceed 180 days, from initial startup of the new paste mixers before the units are considered to be fully operational. The emission units listed below may not be operated after the new paste mixers become fully operational without first undergoing New Source Review from the Air Pollution Control Program.

<u>No.</u>	Unit ID	Emission Unit Description
1.	EP-40	Paste Mixer
2.	EP-41	Paste Mixer
3.	EP-69	Old Cast on Strap #4
4.	EP-5	Positive Oxide Silo
5.	EP-6	Negative Oxide Silo
6.	EP-8	Wet Positive Oxide Mixing
7.	EP-9	Wet Negative Oxide Mixing

- B. Enersys Energy Products, Inc. shall notify the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 15 days after the following events occur:
  - 1) The date of initial start-up of the new paste mixers (EP-85 and EP-86),
  - 2) The date the new paste mixers become fully operational or 180 days after initial start-up of the new paste mixers, whichever is sooner, and

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#### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

3) The date each unit listed in Special Condition Number 2.A is rendered inoperable.

#### 3. Emission Limitations

- A. Enersys Energy Products, Inc. shall emit less than 100 tons of Volatile Organic Compounds (VOCs) from the entire installation in any consecutive 12-month period.
- B. Enersys Energy Products, Inc. shall emit less than 0.6 tons of lead from the entire installation in any consecutive 12-month period.
- C. Attachment A and Attachment B or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 3.A and 3.B.
- D. Enersys Energy Products, Inc. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 3.C indicate that the source exceeds the limitation of Special Conditions Number 3.A and 3.B.
- Control Device Baghouses Equipped with High Efficiency Particulate Arresting (HEPA) Filters
  - A. Enersys Energy Products, Inc. shall duct emissions from the equipment listed in Appendix A of this document to its corresponding baghouse equipped with HEPA filter to control the lead and PM<sub>10</sub> emissions from each listed source as specified in the permit application.
  - B. Each baghouse equipped with HEPA filter must be in operation at all times when the associated equipment is in operation. Enersys Energy Products, Inc. shall shut down any process controlled by a baghouse equipped with HEPA filter during a malfunction until such time that the installation or its vendor(s) make the required repairs to the control device.
  - C. Each baghouse equipped with HEPA filter shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the DNR employees may easily observe them. Replacement filters shall be kept on hand at all times.
  - D. Enersys Energy Products, Inc. shall monitor and record the operating pressure drop across each baghouse equipped with HEPA filter at least

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#### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.

- E. Enersys Energy Products, Inc. shall maintain an operating and maintenance log for each baghouse equipped with HEPA filter which shall include the following:
  - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
  - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
- 5. Control Device Wet Scrubber Conditions
  - A. Enersys Energy Products, Inc. shall operate the wet scrubbers (CD19 and CD20) associated with the wet mixing systems and the fume scrubber (CD8) associated with the bulk sulfuric acid tank to control process emissions. The scrubbers shall be in operation at all times the associated equipment is in use. The scrubbers shall be operated and maintained in accordance with the manufacturer's specifications.
  - B. Enersys Energy Products, Inc. shall maintain an operating, maintenance and inspection log for the scrubbers which shall include the following:
    - 1) Incidents of malfunction(s) including the date(s) and duration of the event, the probable cause, any corrective actions taken and the impact on emissions due to the malfunction;
    - 2) Any maintenance activities conducted on the unit, such as replacement of equipment, etc.; and
    - 3) A record of regular inspection schedule, the date and results of all inspections including any actions or maintenance activities that result from that inspection.
- 6. Recordkeeping Requirements

Records may be kept in either written or electronic format. Enersys Energy Products, Inc. shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used in this equipment.

## REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE SECTION (5) REVIEW

Project Number: 2005-10-018
Installation ID Number: 101-0023
Permit Number:

Enersys Energy Products, Inc. 617 N. Ridgeview Dr. Warrensburg, MO 64093-9301

Complete: October 12, 2005 Reviewed: December 6, 2005

Parent Company: Enersys 2366 Bernville Road Reading, PA 19605

Johnson County, S19, T46N, R25W

#### **REVIEW SUMMARY**

- Enersys Energy Products, Inc. has applied for authority to construct Phase II of the Large VRLA Cell Assembly line.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. Lead is the HAP of concern for this review and it will be emitted as particulate matter.
- Subpart KK, of the New Source Performance Standards (NSPS), Standards of Performance for Lead-Acid Battery Manufacturing Plants, applies to some of the proposed equipment.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Baghouses equipped with HEPA filters are being used to control the particulate matter less than 10 microns (PM<sub>10</sub>) and lead particulate emissions from nearly all equipment in this permit. Wet scrubbers will be installed on the new paste mixing systems, rather than baghouses.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of all criteria pollutants are below de minimis levels.
- This installation is located in Johnson County, an attainment area for all criteria air pollutants.
- This installation is on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2, No. 27].

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is required for the applicable equipment per NSPS, Subpart KK.
- An Intermediate Operating Permit is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

#### INSTALLATION DESCRIPTION

Enersys Energy Products, Inc. is engaged in the manufacture of specialty lead-acid batteries for various commercial and industrial applications. The facility consists of two plants, Plant #1 and Plant #2 located on the same site in an industrial park on the east side of Warrensburg, Missouri. Some of the lead oxide is manufactured at the installation, while the remainder is purchased for use as a raw material in the manufacture of the lead-acid batteries.

Potential lead emissions cause Enersys Energy Products, Inc. to be considered a major source under construction permits. A Part 70 Operating Permit (OP1999-093) was issued to the facility from the Air Pollution Control Program (APCP); however, the applicant submitted an application to reclassify the installation as an Intermediate Source (Project Nos. 2004-01-091 and 2004-01-092). Upon issuance of this permit, the applicant is required to revise their Intermediate Operating Permit application. The following construction permits have previously been issued to the installation.

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Table 1: List of Construction Permits

Permit Number	Description
0284-011A-018A	Lead acid battery plant
0885-008-009	Lead smelting furnace
0590-013	Central vacuum cleaner system, battery core drying, melting pot and filters
1090-008	New continuous grid casting process
0791-002	Lead oxide transfer from two storage silos and mixing room
1292-001	Replacement of electric melting pot (lead melting pot)
1193-001	Modify plate perforation lube system from kerosene to a "vanishing oil"
1294-012	Installation of 3 new grid perforators, replacement of a Wirtz continuous grid caster
	with a continuous chill caster, and construction of a new lead manufacturing facility
	on the same site
0495-017	New drying oven
0196-014	Installation of additional equipment in facility permitted in Permit No. 1294-012
0896-020	Transfer of existing Natural Gas fired cast-on-strap from Plant #1 to Plant #2
092000-004	New lead acid battery manufacturing line
052001-019	Temporary permit for testing a cast on strap machine
092000-004A	Modification of performance testing requirements
112003-012	New lead oxide manufacturing process line and replacement of an existing weigh
	hopper within the existing paste mixing process
122004-010	Phase I of the Large VRLA Cell Assembly line

#### PROJECT DESCRIPTION

Enersys Energy Products, Inc. intends to install a new process line to produce batteries for the Department of Navy's submarine fleet. The new line is referred to as the Large VRLA Cell Assembly Line and will produce 4,000 Amp-Hour batteries. The applicant has divided construction of the new line into two phases. For permitting purposes, installation of the line requires review as one project. Therefore, equipment from Project No. 2004-09-051 (Phase I) will be re-evaluated with the equipment that is currently proposed (Phase II), to determine total project potential. The special conditions contained in Permit No. 122004-010 have been superseded with this permit.

The installation's existing permitted processes and operations produce and will provide the primary inflow of required materials in the manufacture of these new batteries. The applicant has stated that installation of the new line will not "de-bottleneck" or otherwise change the operations of the existing installation's operations. The applicant has voluntarily requested an installation-wide de minimis limit for lead (0.6 tons per year) and a 100-ton per year limit for VOC. Special conditions are included in this permit establishing those limits. As mentioned previously, the limit on VOC emissions does not relieve the installation from obtaining an Intermediate Operating permit; the applicant must submit and maintain an Intermediate Operating permit for the installation.

The proposed Large VRLA Cell Assembly Line will consist of the equipment/processes identified in Table 2 below. Almost all lead/PM<sub>10</sub>-emitting sources will utilize a baghouse equipped with HEPA filters for control of emissions, with a control efficiency of 99.9 percent. Enersys has provided the Air Pollution Control Program stack testing results for multiple units at their installation to establish their ability to achieve 99.9% control using baghouses equipped with HEPA filters. Rather than a baghouse, the new paste mixing systems will be equipped with wet scrubbers that offer 85% control of emissions. The non-lead emitting sources on the new line (perforators, element potting and heat sealing) emit VOCs contained in the lubricating oils. Oil usage is expected to be no more than 0.55 gallons per hour, based on similar operations at the installation. The maximum density of the oils and adhesives used is expected not to exceed 6.42 pounds per gallon and is expected to contain 100% volatile organic compounds. Epoxy usage will not exceed 42.8 pounds per hour, according to the applicant. Test results submitted by the applicant show that 0.04 percent, by weight of the product used is emitted to the ambient air. There are no HAPs in the lubricating oils and adhesives.

Table 2: New Emission Units/Processes Associated with this Permit

No.   Unit ID   Description of Unit   Description				Maximum Haurly	Control	
Unit ID	NI			Maximum Hourly	Control	Control Dovice
EP-37.6   New Multi-Alloy Strip Caster   7 tph		Linit ID	Description of Unit			
2 EP-37.6         New Mirtz Continuous Grid Caster         7 (ph)         CD-16         Baghouse Baghouse           2 EP-37.7         New Wirtz Continuous Grid Caster         1 tph         CD-16         Esisting Baghouse           4 EP-84         New Positive Mix Filter Receiver         2 tph         CD-84         Baghouse           5 EP-85         New Positive Paste Mixing System (replacing (replacing EP-41)         2 tph         CD-85         Wet scrubber           6 EP-86         New Negative Paste Mixing System (replacing EP-41)         2 tph         CD-86         Wet scrubber           7 EP-87.1         Existing 8° Positive Paster/Cutter/Stacker (reprevously EP-42, EP-42.5)         2 tph         CD-87         Baghouse           8 EP-87.2         Existing 8° Negative Paster/Cutter/Stacker (reprevously EP-42, EP-42.5)         2 tph         CD-87         Baghouse           9 EP-87.3         (reviously EP-42, EP-42.5)         2 tph         CD-87         Baghouse           10 EP-87.4         New 24° Positive Paster/Cutter/Stacker (reviously EP-42.5)         2 tph         CD-87         Baghouse           11 EP-87.5         New Large VRLA Element Stacking 1         0.25 tph         CD-87         Baghouse           12 EP-82.1         New Large VRLA Element Stacking 2         0.25 tph         CD-82         Existing Baghouse	0.	UIII ID	Description of Offic	(MINDK)	ן וט	Description
2 EP-37.6         New Mirtz Continuous Grid Caster         7 (ph)         CD-16         Baghouse Baghouse           2 EP-37.7         New Wirtz Continuous Grid Caster         1 tph         CD-16         Esisting Baghouse           4 EP-84         New Positive Mix Filter Receiver         2 tph         CD-84         Baghouse           5 EP-85         New Positive Paste Mixing System (replacing (replacing EP-41)         2 tph         CD-85         Wet scrubber           6 EP-86         New Negative Paste Mixing System (replacing EP-41)         2 tph         CD-86         Wet scrubber           7 EP-87.1         Existing 8° Positive Paster/Cutter/Stacker (reprevously EP-42, EP-42.5)         2 tph         CD-87         Baghouse           8 EP-87.2         Existing 8° Negative Paster/Cutter/Stacker (reprevously EP-42, EP-42.5)         2 tph         CD-87         Baghouse           9 EP-87.3         (reviously EP-42, EP-42.5)         2 tph         CD-87         Baghouse           10 EP-87.4         New 24° Positive Paster/Cutter/Stacker (reviously EP-42.5)         2 tph         CD-87         Baghouse           11 EP-87.5         New Large VRLA Element Stacking 1         0.25 tph         CD-87         Baghouse           12 EP-82.1         New Large VRLA Element Stacking 2         0.25 tph         CD-82         Existing Baghouse	_					Existing
2         EP-37.7         New Wirtz Continuous Grid Caster         1 tph         CD-16         Existing Baghouse Baghouse           3         EP-83         New Positive Mix Filter Receiver         2 tph         CD-83         Baghouse           5         EP-85         New Negative Mix Filter Receiver         2 tph         CD-84         Baghouse           5         EP-85         New Negative Paste Mixing System (replacing EP-41)         2 tph         CD-86         Wet scrubber           6         EP-86         New Negative Paste Mixing System (replacing EP-41)         2 tph         CD-86         Wet scrubber           7         EP-87.1         Existing 8' Positive Paster/Cutter/Stacker (previously EP-42.1, EP-42.3, EP-42.3)         2 tph         CD-87         Baghouse           8         EP-87.2         Existing 8' Negative Paster/Cutter/Stacker (identified as EP-82 in Permit No. 122004-010)         2 tph         CD-87         Baghouse           9         EP-87.3         New Zaf' Negative Paster/Cutter/Stacker (identified as EP-82 in Permit No. 122004-010)         2 tph         CD-87         Baghouse           10         EP-87.5         New Rotary Die Cleaning System         <0.1	1	EP-37.6	New Multi-Alloy Strip Caster	7 tph	CD-16	
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8         EP-84         New Positive Mix Filter Receiver         2 tph         CD-84         Baghouse           4         EP-85         New Positive Paste Mixing System (replacing EP-85)         2 tph         CD-85         Wet scrubber           6         EP-86         New Regative Mixing System (replacing EP-41)         2 tph         CD-86         Wet scrubber           7         EP-87.1         Existing 8' Positive Paster/Cutter/Stacker (previously EP-42.1, EP-42.3, EP-42.3)         2 tph         CD-87         Baghouse           8         EP-87.2         Existing 8' Negative Paster/Cutter/Stacker (previously EP-42.4, EP-42.5, EP-42.6)         2 tph         CD-87         Baghouse           9         EP-87.3         New 24' Positive Paster/Cutter/Stacker (previously EP-42.4, EP-42.5, EP-42.6)         2 tph         CD-87         Baghouse           9         EP-87.4         New 24' Positive Paster/Cutter/Stacker (previously EP-42.4, EP-42.5, EP-42.6)         2 tph         CD-87         Baghouse           10         EP-87.4         New 24' Regative Paster/Cutter/Stacker (previously EP-42.4, EP-42.5, EP-42.6)         2 tph         CD-87         Baghouse           11         EP-87.5         New Setar/Cutter/Stacker (previously EP-42.4, EP-42.5, EP-42.6)         2 tph         CD-87         Baghouse           12         EP-87.5         New Large VRLA	2	EP-37.7	New Wirtz Continuous Grid Caster	1 tph	CD-16	
4         EP-84         New Negative Mix Filter Receiver         2 tph         CD-84         Baghouse           5         EP-85         New Positive Paste Mixing System         2 tph         CD-85         Wet scrubber           6         EP-86         New Negative Paste Mixing System (replacing rep-41)         2 tph         CD-86         Wet scrubber           7         EP-87.1         Existing 8" Positive Paster/Cutter/Stacker (previously EP-42.1 EP-42.3)         2 tph         CD-87         Baghouse           8         EP-87.2         Exp-87.2         Exp-42.5         2 tph         CD-87         Baghouse           9         EP-87.3         Existing 8" Negative Paster/Cutter/Stacker (retreviously EP-42.4 EP-42.5)         2 tph         CD-87         Baghouse           9         EP-87.4         New 24" Rogative Paster/Cutter/Stacker (identified as EP-82 in Permit No. 122004-010)         2 tph         CD-87         Baghouse           10         EP-87.4         New Large VRLA Element Stacking 1 (permitted in Permit No. 122004-010)         0.25 tph         CD-87         Baghouse           12         EP-82.1         New Large VRLA Element Stacking 3         0.25 tph         CD-82         Existing Baghouse           15         EP-82.3         New Large VRLA Element Stacking 3         0.25 tph         CD-82         E	3	FP-83	New Positive Mix Filter Receiver	2 tph	CD-83	
5         EP-85         New Positive Paste Mixing System (replacing 4-0)         2 tph         CD-85         Wet scrubber           6         EP-86         New Negative Paste Mixing System (replacing EP-41)         2 tph         CD-86         Wet scrubber           7         EP-87.1         Existing 8" Positive Paster/Cutter/Stacker (previously EP-42.1, EP-42.3, EP-42.3)         2 tph         CD-87         Baghouse           8         EP-87.2         Existing 8" Negative Paster/Cutter/Stacker (previously EP-42.4, EP-42.5, EP-42.6)         2 tph         CD-87         Baghouse           9         EP-87.3         New 24" Positive Paster/Cutter/Stacker (identified as EP-82 in Permit No. 122004-010)         2 tph         CD-87         Baghouse           10         EP-87.5         New Rotary Die Cleaning System         -0.1         CD-87         Baghouse           11         EP-87.5         New Rotary Die Cleaning System         -0.1         CD-87         Baghouse           12         EP-8.5         New Large VRLA Element Stacking 1         0.25 tph         CD-82         Existing Baghouse           13         EP-8.2         New Large VRLA Element Stacking 2         0.25 tph         CD-82         Existing Baghouse           14         EP-82.3         New Large VRLA Element Stacking 3         0.25 tph         CD-82         Ex						
EP-80				•		
FP-80	5	EP-85	(replacing -40)	2 tph	CD-85	Wet scrubber
EP-87.1   (previously EP-42.1, EP-42.3, EP-42.3)   2 tph   CD-87   Baghouse	6	EP-86		2 tph	CD-86	Wet scrubber
8         EP-87.2         Existing 8' Negative Paster/Cutter/Stacker (previously EP-42.4, EP-42.5, EP-42.6)         2 tph         CD-87         Baghouse           9         EP-87.3         (New 24' Positive Paster/Cutter/Stacker (previously EP-42.4)         2 tph         CD-87         Baghouse           10         EP-87.4         New 24' Negative Paster/Cutter/Stacker         2 tph         CD-87         Baghouse           11         EP-87.5         New Rotary Die Cleaning System         < 0.1	7	EP-87.1		2 tph	CD-87	Baghouse
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10   EP-87.4   New 24" Negative Paster/Cutter/Stacker   2 tph   CD-87   Baghouse   11   EP-87.5   New Rotary Die Cleaning System   <0.1   CD-87   Baghouse   2 tph   CD-87   Baghouse   2 tp-82.1   New Large VRLA Element Stacking 1 (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse   2 tp-82.2   New Large VRLA Element Stacking 2   0.25 tph   CD-82   Existing Baghouse   2 tp-82.3   New Large VRLA Element Stacking 3   0.25 tph   CD-82   Existing Baghouse   2 tp-82.4   New Large VRLA Element Stacking 3   0.25 tph   CD-82   Existing Baghouse   2 tp-82.5   New Large VRLA Element Tinning (permitted in Permit No. 122004-010)   New Large VRLA Element Stuffing (permitted in Permit No. 122004-010)   New Large VRLA Element Stuffing (permitted in Permit No. 122004-010)   New Large VRLA Element Stuffing (permitted in Permit No. 122004-010)   New Large VRLA Element Stuffing (permitted in Permit No. 122004-010)   New Large VRLA Heat Seal (permitted in Permit No. 122004-010)   Not an emissions source   N/A   New Permit No. 122004-010)   Not an emissions source   N/A   New Permit No. 122004-010)   Not an emissions source   N/A   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   Not an emissions source   N/A   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   Ne	9	EP-87.3		2 tph	CD-87	Baghouse
11   EP-87.5   New Rotary Die Cleaning System	10	EP-87.4		2 tph	CD-87	Baghouse
12   EP-82.1   (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse   Existing Ba	11				CD-87	
13   EP-82.2   New Large VRLA Element Stacking 2   0.25 tph   CD-82   Existing Baghouse   EN-82.3   New Large VRLA Element Stacking 3   0.25 tph   CD-82   Existing Baghouse   EN-82.4   New Large VRLA Element Tinning (permitted in Permit No. 122004-010)   0.1 tph   CD-82   Existing Baghouse   Existing Baghouse   EN-82.5   New Large VRLA Element COS (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse   Existing Baghouse   EN-82.5   New Large VRLA Element COS (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse   EN-82.6   New Large VRLA Element Stuffing (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse   EP-82.6   EP-82.8   New Large VRLA Heat Seal (permitted in Permit No. 122004-010)   Not an emissions source   Not an emissions   Not an emissions	10	ED 00.4	New Large VRLA Element Stacking 1	0.25 tob	CD 02	Existing
14   EP-82.3   New Large VRLA Element Stacking 3   0.25 tph   CD-82   Existing Baghouse     15   EP-82.4   New Large VRLA Element Tinning (permitted in Permit No. 122004-010)   0.1 tph   CD-82   Existing Baghouse     16   EP-82.5   New Large VRLA Element COS (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse     17   EP-82.6   New Large VRLA Element Stuffing (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse     18   EP-51.5   Epoxy Stations #5 and #6 (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse     19   EP-82.7   New Large VRLA Heat Seal (permitted in Permit No. 122004-010)   Not an emissions source   N/A     19   EP-82.8   New Large VRLA Heat Seal (permitted in Permit No. 122004-010)   Not an emissions source   N/A     20   EP-83   New Genesis Drying Oven #11   28 MMBTU/hr   none   N/A     21   EP-94   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   0.002 tph   none   N/A     22   EP-95   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   0.002 tph   none   N/A     23   EP-69   New Cast-on Strap #4 (replacing old EP-69)   18.8 tph   CD-69   Existing Baghouse     24   EP-	12	EP-82.1	(permitted in Permit No. 122004-010)	0.25 tpn	CD-82	Baghouse
14   EP-62.3   New Large VRLA Element Tinning (permitted in Permit No. 122004-010)   0.1 tph   CD-82   Existing Baghouse     16   EP-82.5   New Large VRLA Element COS (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse     17   EP-82.6   New Large VRLA Element Stuffing (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse     18   EP-51.5   Epoxy Stations #5 and #6 (permitted in Permit No. 122004-010)   0.25 tph   CD-82   Existing Baghouse     19   EP-82.7   New Large VRLA Heat Seal (permitted in Permit No. 122004-010)   Not an emissions source   N/A     19   EP-82.8   New Large VRLA Heat Seal (permitted in Permit No. 122004-010)   Not an emissions source   N/A     20   EP-93   New Genesis Drying Oven #11   28 MMBTU/hr   none   N/A     21   EP-94   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   0.002 tph   none   N/A     22   EP-95   New Perforator for Large VRLA (permitted in Permit No. 122004-010)   0.002 tph   none   N/A     23   EP-69   New Cast-on Strap #4 (replacing old EP-69)   18.8 tph   CD-69   Existing Baghouse     EP-	13	EP-82.2	New Large VRLA Element Stacking 2	0.25 tph	CD-82	
15   EP-62.4   in Permit No. 122004-010)   0.1 tph   CD-82   Baghouse	14	EP-82.3	New Large VRLA Element Stacking 3	0.25 tph	CD-82	
Permit No. 122004-010   D.25 tph   CD-82   Baghouse	15	EP-82.4	in Permit No. 122004-010)	0.1 tph	CD-82	
18   EP-82.6     Epoxy Stations #5 and #6 (permitted in Permit No. 122004-010)	16	EP-82.5	Permit No. 122004-010)	0.25 tph	CD-82	Baghouse
No. 122004-010   Not an emissions source   Not an emissions	17	EP-82.6		0.25 tph	CD-82	
Permit No. 122004-010   Source   None   N/A	18	EP-51.5		42.85 lb/hr	none	N/A
20   EP-82.8   New Large VRLA Heat Seal   Source   N/A	19	EP-82.7			none	N/A
21         EP-94         New Perforator for Large VRLA (permitted in Permit No. 122004-010)         0.002 tph         none         N/A           22         EP-95         New Perforator for Large VRLA (permitted in Permit No. 122004-010)         0.002 tph         none         N/A           23         EP-69         New Cast-on Strap #4 (replacing old EP-69)         18.8 tph         CD-69         Existing Baghouse           24         EP-42.10.1         New Encapsulator 0-5         2.35 tph         CD-42         Existing Baghouse           25         EP-42.10.2         New Encapsulator 0-6         2.35 tph         CD-42         Existing Baghouse           26         EP-42.10.3         New Encapsulator 0-7         2.35 tph         CD-42         Existing Baghouse           27         EP-42.10.4         New Encapsulator 0-8         2.35 tph         CD-42         Existing Baghouse           28         EP-90         New Space Heater         2 MMBTU/hr         none         N/A           29         EP-91         New Space Heater         Incl. in EP-90         none         N/A	20	EP-82.8	New Large VRLA Heat Seal		none	N/A
21         EP-94         New Perforator for Large VRLA (permitted in Permit No. 122004-010)         0.002 tph         none         N/A           22         EP-95         New Perforator for Large VRLA (permitted in Permit No. 122004-010)         0.002 tph         none         N/A           23         EP-69         New Cast-on Strap #4 (replacing old EP-69)         18.8 tph         CD-69         Existing Baghouse           24         EP-42.10.1         New Encapsulator 0-5         2.35 tph         CD-42         Existing Baghouse           25         EP-42.10.2         New Encapsulator 0-6         2.35 tph         CD-42         Existing Baghouse           26         EP-42.10.3         New Encapsulator 0-7         2.35 tph         CD-42         Existing Baghouse           27         EP-42.10.4         New Encapsulator 0-8         2.35 tph         CD-42         Existing Baghouse           28         EP-90         New Space Heater         2 MMBTU/hr         none         N/A           29         EP-91         New Space Heater         Incl. in EP-90         none         N/A	20	EP-93	New Genesis Drying Oven #11	28 MMBTU/hr	none	N/A
Permit No. 122004-010   CD-02 tpm   Tione   N/A	21	EP-94		0.002 tph	none	N/A
23   EP-69   New Cast-on Strap #4 (replacing old EP-69)   18.8 tph   CD-69   Baghouse	22	EP-95		0.002 tph	none	N/A
24         42.10.1         New Encapsulator 0-5         2.35 tph         CD-42         Baghouse           25         EP- 42.10.2         New Encapsulator 0-6         2.35 tph         CD-42         Existing Baghouse           26         EP- 42.10.3         New Encapsulator 0-7         2.35 tph         CD-42         Existing Baghouse           27         EP- 42.10.4         New Encapsulator 0-8         2.35 tph         CD-42         Existing Baghouse           28         EP-90         New Space Heater         2 MMBTU/hr         none         N/A           29         EP-91         New Space Heater         Incl. in EP-90         none         N/A	23	EP-69	New Cast-on Strap #4 (replacing old EP-69)	18.8 tph	CD-69	
EP- 42.10.2         New Encapsulator 0-6         2.35 tph         CD-42         Existing Baghouse           26         EP- 42.10.3         New Encapsulator 0-7         2.35 tph         CD-42         Existing Baghouse           27         EP- 42.10.4         New Encapsulator 0-8         2.35 tph         CD-42         Existing Baghouse           28         EP-90         New Space Heater         2 MMBTU/hr         none         N/A           29         EP-91         New Space Heater         Incl. in EP-90         none         N/A	24		New Encapsulator 0-5	2.35 tph	CD-42	Existing
EP- 42.10.3New Encapsulator 0-72.35 tphCD-42Existing Baghouse27EP- 42.10.4New Encapsulator 0-82.35 tphCD-42Existing Baghouse28EP-90New Space Heater2 MMBTU/hrnoneN/A29EP-91New Space HeaterIncl. in EP-90noneN/A	25	EP-	New Encapsulator 0-6	2.35 tph	CD-42	Existing
27 42.10.4 New Encapsulator 0-8 2.35 tpn CD-42 Baghouse 28 EP-90 New Space Heater 2 MMBTU/hr none N/A 29 EP-91 New Space Heater Incl. in EP-90 none N/A	26	EP- 42.10.3	New Encapsulator 0-7	2.35 tph	CD-42	
28EP-90New Space Heater2 MMBTU/hrnoneN/A29EP-91New Space HeaterIncl. in EP-90noneN/A	27		New Encapsulator 0-8	2.35 tph	CD-42	
	28	EP-90	New Space Heater	2 MMBTU/hr	none	
30 EP-92 New Air Makeup Unit Incl. in EP-90 none N/A	29	EP-91		Incl. in EP-90	none	N/A
	30	EP-92		Incl. in EP-90	none	N/A

31	EP-82	Lubricant Usage	0.55 aph	none	N/A

#### **EMISSIONS/CONTROLS EVALUATION**

The emission factors and control efficiencies used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 12.15, *Storage Battery Production's* Background Report (1/95). The potential VOC emissions from lubricating oil use were calculated using a mass balance approach, assuming that all VOC in the lubricating oils is emitted to the ambient air. Epoxy VOC emissions were based on the test results previously discussed. Existing potential emissions of  $PM_{10}$ , HAPs, lead and VOC were taken from permit number 112003-012. Existing potential emissions of  $SO_x$ ,  $NO_x$  and CO were recalculated during this review to verify combustion equipment emissions. Existing actual emissions were taken from the applicant's 2004 Emissions Inventory Questionnaire (EIQ) submittal. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions (2004 EIQ)	Potential Emissions of the Application	Installation Conditioned Potential
PM <sub>10</sub>	15.0	4.60	1.08	3.45	N/A
SOx	40.0	0.15	0.09	0.08	N/A
NOx	40.0	28.03	2.75	13.35	N/A
VOC	40.0	122.17	21.28	16.28	<100.0
СО	100.0	21.10	2.31	11.21	N/A
HAPs	10.0/25.0	0.1424	N/D	0.25	N/A
Lead	0.6	1.6	0.089	0.25	<0.6

<sup>\*</sup>N/A = Not Applicable; N/D = Not Determined

#### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all criteria pollutants are below de minimis levels.

#### APPLICABLE REQUIREMENTS

Enersys Energy Products, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

#### **GENERAL REQUIREMENTS**

- Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110
  - The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.
- Operating Permits, 10 CSR 10-6.065
- Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, 10 CSR 10-6.170
- Restriction of Emission of Visible Air Contaminants, 10 CSR 10-6.220
- Restriction of Emission of Odors, 10 CSR 10-3.090

#### SPECIFIC REQUIREMENTS

- Restriction of Emission of Particulate Matter From Industrial Processes, 10 CSR 10-6.400
- New Source Performance Regulations, 10 CSR 10-6.070 New Source Performance Standards (NSPS) for Lead-Acid Battery Manufacturing Plants, 40 CFR Part 60, Subpart KK

#### STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Line Mei	
Lina Klein	Date
Environmental Engineer	

#### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 16, 2005, received October 12, 2005, designating Enersys as the owner and operator of the installation.
- U.S. EPA document AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition.
- Kansas City Regional Office Site Survey, dated October 24, 2005.

#### **Attachment A: Monthly Lead Tracking Record**

Enersys Energy Products, Inc. Johnson County, S19, T46N, R25W Project Number: 2005-10-018 Installation ID Number: 101-0023

Permit Number:

This sheet	covers the peri	iod from	_ to		
	·	iod from(month, year)	(month	n, year)	
Copy this shee	et as needed.				
Column A	Column B	Column C	Column D	Column E	Column F
Date	Emission Point ID	Emission Point Description	(a) Amount Processed	(b) Pb Emission Factor	(c) Pb Emissions (tons)
(d) Total Pb	Emissions Ca	alculated for this Month in Ton	S:		
		ns Total From Previous Month'			
		Total (d) from Previous Year's		A, In Tons:	
(g) Current	12-month Tota	al of Pb Emissions in Tons : [(d	(1) + (e) - (f)		

- (a) Amount of lead processed, in tons;
- (b) Pb Emission Factor (pounds per ton processed);
- (c) [Column F] = [Column D] x [Column E] x 0.0005; (d) Summation of [Column F] in Tons; and
- (e) Calculate the new 12-month Pb emissions total. A 12-Month Pb emissions total (e) of less than 0.6 tons indicates compliance.

#### **Attachment B: Monthly VOC Tracking Record**

Enersys Energy Products, Inc.
Johnson County, S19, T46N, R25W
Project Number: 2005-10-018
Installation ID Number: 101-0023
Permit Number:

This sheet covers the period from _		to		
	(month, year)		(month, year)	

Copy this sheet as needed

Copy this sheet as nee	eded.				
Column A	Column B	Column C	Column D	Column E	
(a) Material Used (Name, Type)	Amount of Material Used (Include Units)	Density (lbs/gal)	VOC Content (Weight %)	(b) VOC Emissions (Tons)	
. ,	(c) Total VOC Emissions Calculated for this Month in Tons:				
(d) 12-Month VO					
(e) Monthly VOC					
(f) Current 12-mo					

- (a) List type of material used: lubricating oil, epoxy, drying oven, or other combustion unit.
- (b) Choose appropriate VOC calculation method for units reported (usage excludes portion disposed, if any):
  - 1) If usage is in tons [Column B] x [Column D] = [Column E];
  - 2) If usage is in pounds [Column B] x [Column D] x [0.0005] = [Column E];
  - 3) If usage is in gallons [Column B] x [Column C] x [Column D] x [0.0005] = [Column E].
- (c) Summation of [Column E] in Tons; and
- (f) Calculate the new 12-month VOC emissions total. A 12-Month VOC emissions total (e) of less than 100.0 tons indicates compliance.

# Appendix A Equipment Controlled by Baghouses Equipped with HEPA Filters

Emission		Control	Emission		Control
Point ID	Description	Device	Point ID	Description	Device
No.	_ 000p	ID No.	No.	2 333114 11311	ID No.
1	Positive Oxide Silo	CD1	42.10.8	Encapsulator #0-8	CD21
2	Negative Oxide Silo	CD2	82	Cast on Strap #5	CD82
3	Positive Oxide Silo	CD3	82	Encapsulator #4-1	CD82
4	Negative Oxide Silo	CD4	82	Encapsulator #4-2	CD82
7	Dry Oxide Mixing	CD7	82	Encapsulator #4-3	CD82
11	Reclaim Furnace/Chill Cast	CD6	82	Encapsulator #4-4	CD82
12	Wirtz Caster	CD11	82	Pb Melting Pot Grid Oxide M.	CD82
13	Central Vac	CD5	81	Pb Oxide Mill	CD81
37.1	Continuous Chill Caster	CD16	80	Pb Oxide Storage Silos	CD80
37.2	PbSn Primary Furnace	CD16	42.10.1	Encapsulator #0-1	CD21
37.3	Pb Primary Furnace	CD16	42.10.2	Encapsulator #0-2	CD21
37.4	PbSn Reclaim Furnace	CD16	42.10.3	Encapsulator #0-3	CD21
37.5	Pb Reclaim Furnace	CD16	42.10.4	Encapsulator #0-4	CD21
38	Pos. Oxide Transfer System	CD17	82.1	Large VRLA Element Stacking 1	CD82
39	Neg. Oxide Transfer System	CD18	82.2	Large VRLA Element Stacking 2	CD82
42.7	Cast on Strap #1	CD21	82.3	Large VRLA Element Stacking 3	CD82
42.7.1	Encapsulator #1-1	CD21	82.4	Large VRLA Tinning	CD82
42.7.2	Encapsulator #1-2	CD21	82.5	Large VRLA Cast on Strap	CD82
42.7.3	Encapsulator #1-3	CD21	82.6	VRLA Element Stuffing	CD82
42.7.4	Encapsulator #1-4	CD21	83	Pos. Mix Filter Receiver	CD83
42.8	Cast on Strap #2	CD21	87.1	8" Pos. Paster/Cutter/Stacker	CD87
42.8.1	Encapsulator #2-1	CD21	87.2	8" Neg. Paster/Cutter/Stacker	CD87
42.8.2	Encapsulator #2-2	CD21	87.3	24" Pos. Paster/Cutter/Stacker	CD87
42.8.3	Encapsulator #2-3	CD21	87.4	24" Neg. Paster/Cutter/Stacker	CD87
42.8.4	Encapsulator #2-4	CD21	87.5	Rotary Die Cleaning System	CD87
42.9	Cast on Strap #3	CD21	37.6	Multi-Alloy Strip Caster	CD16
42.9.1	Encapsulator #3-1	CD21	37.7	Wirtz Continuous Caster	CD16
42.9.2	Encapsulator #3-2	CD21	84	Neg. Mix Filter Receiver	CD84
42.9.3	Encapsulator #3-3	CD21	45.1	Maintenance Down Draft	CD22
42.9.4	Encapsulator #3-4	CD21	45.2	SE Dock Air Purification	CD22
69	Cast on Strap #4	CD69	46	Central Vac. System A	CD22
42.10.5	Encapsulator #0-5	CD21	47	Central Vac. System B	CD22
42.10.6	Encapsulator #0-6	CD21	73	Central Vac.	CD73
42.10.7	Encapsulator #0-7	CD21	79	Ball Mill Pos. Paste Mixing/Storage	CD79